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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,714	01/20/2004	Hua Wang	137825-1	3685

6147 7590 10/28/2004
GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

BOYKIN, TERRESSA M

ART UNIT PAPER NUMBER

1711

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,714

Applicant(s)

WANG ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/04/5/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-53 are rejected under 35 U.S.C. 102(e) as being anticipated by **US Pub 20040166323**, note pages 1,2,3 and 5, page 10 paragraph 65 examples 1,2, and 3, and tables 1-5.

Applicants' claim 1 discloses a multilayer article assembly comprising (i) a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one aromatic dicarboxylic acid, (ii) a second layer comprising a polymer comprising carbonate structural units, (iii) an adhesive layer comprising a polyurethane, and (iv) an *uncured* thermoset or *uncured* cyclic oligomer substrate layer, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer.

The reference **USPub 20040166323** discloses that the substrate layer in the multilayer articles of this invention may also comprise at least one of any cured, uncured or at least partially cured thermoset resin and the use of the term "thermoset resin" in the present context refers to any of these options. Suitable thermoset resin substrates

include, but are not limited to, those derived from epoxys, cyanate esters, unsaturated polyesters, diallylphthalate, acrylics, alkyds, phenol-formaldehyde, novolacs, resoles, bismaleimides, PMR resins, melamine-formaldehyde, urea-formaldehyde, benzocyclobutanes, hydroxymethylfurans, and isocyanates. In one embodiment of the reference the thermoset resin substrate comprises a RIM material. In another embodiment of the invention the thermoset resin substrate further comprises at least one thermoplastic polymer, such as, but not limited to, polyphenylene ether, polyphenylene sulfide, polysulfone, polyetherimide, or polyester. Said thermoplastic polymer is typically combined with thermoset monomer mixture before curing of said thermoset. In a particular embodiment a substrate of the invention comprises an acrylic ester-derived thermoset resin containing a polyphenylene ether. In another particular embodiment a thermoset resin substrate of the invention comprises a vinyl monomer-containing thermoset resin, illustrative examples of which include styrene monomer-containing thermoset resin, optionally containing at least one thermoplastic resin such as, but not limited to, polyphenylene ether.

In one particular embodiment of the reference **USPub 20040166323** a multilayer article comprising (i) a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one aromatic dicarboxylic acid, (ii) a second layer comprising a polymer comprising carbonate structural units, (iii) an adhesive tielayer comprising a copolymer with structural units derived from at least one alkenyl aromatic compound and at least one conjugated diene, and (iv) a substrate layer comprising an uncured thermoset resin, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer; may be prepared by a method comprising the steps of (a) assembling the coating layer, second layer, adhesive layer, and substrate by any known method, and (b) subjecting

the assembly to conditions under which the thermoset is cured by any known method. In some embodiments conditions under which the thermoset may be cured include subjecting the assembly to heat. In other embodiments the multilayer article exhibits a ninety-degree peel force of at least 700 Newtons per meter after the thermoset resin substrate is cured.

Note with regard to applicants' claims 1, 2-7, 25 -44, 52 the reference discloses an article having an surface/coating layer comprising resorcinol arylate polyester chain members. In one embodiment, the article is a multilayer structure with the coating layer comprising resorcinol arylate polyester chain members

The reference further discloses that the outer layer of the article of the present invention is comprised of arylate polyester chain members. Said chain members comprise at least one diphenol residue in combination with at least one dicarboxylic acid residue wherein the diphenol residue is derived from a 1,3-dihydroxybenzene moiety, commonly referred to as resorcinol or resorcinol moiety. Additionally, the reference notes that suitable dicarboxylic acid residues include aromatic dicarboxylic terephthalic acid, or mixtures of isophthalic and terephthalic acids, or from polycyclic moieties, including diphenyl dicarboxylic acid, diphenylether dicarboxylic acid, naphthalenedicarboxylic acid such as naphthalene-2,6-dicarboxylic acid. In one embodiment, the dicarboxylic acid is 1,4-cyclohexanedicarboxylic acid.

Moreover, with regard to applicants' claims 8, 9, 35 and 36 the reference discloses that the outer layer may be comprised of a block copolyestercarbonate comprising resorcinol arylate containing segments in combination with organic carbonate block segments. See also page 2 paragraph 20 and the examples therein.

With regard to applicants' claims 10, 11, 37 and 38 wherein the carbonate portion of the copolyestercarbonate comprises structural units derived from bisphenol A, note claims 37 and 38 of the reference wherein the second layer comprises a bisphenol A polycarbonate.

With regard to applicants' claims 12 and 39 wherein the second layer further comprises at least one colorant selected from the group consisting of dyes, pigments, metal flakes, and glass flakes, note that the reference states on page 2 paragraph 20 that the composition may additionally contain art-recognized additives including but not limited to metal flakes, pigments, dyes, impact modifiers, UV screeners, flame retardants, fillers, stabilizers, flow aids, ester interchange inhibitors, and mold release agents.

With regard to applicants' claims 13 and 40 wherein the adhesive layer comprises at least one polyurethane comprising structural units derived from at least one polyol selected from the group consisting of polyether polyols, polyester polyols, polytetramethylene ether glycol, hexamethylene glycol and polyols based on polybutadiene, note that the reference states on page 10 paragraph 0111 the reference notes the adhesive coating is a clear exterior urethane. Further, the reference discloses that when the multilayer structure of the present invention is to adhere to/mold onto a thermoset or metal substrate, the tie-layer is comprised of a thermoplastic resin selected from the group of an ethylene/vinyl acetate copolymer (EVA), a polyester, a copolyester, a copolyamide, a polyurethane (TPU), a styrene block copolymers (SEBS), a modified SBES, or blends thereof.

With regard to applicants' claims 14 and 41 wherein the polyurethane comprises structural units derived from methylene diphenyl diisocyanate or- methylene biscyclohexyl diisocyanate, the reference discloses in Examples 47 –48 that laminates of copolyestercarbonate-polycarbonate film assembly onto e-coated steel with PU adhesive tie-layer,

With regard to applicants' claims 15, and 42 wherein the polyurethane comprises an aliphatic polyurethane film, and wherein the adhesive layer further comprises at least one additional resinous material which is miscible with or compatible with that portion of the block copolymer which is not polyurethane, the reference discloses the substrate layer may comprise a liquid cast polymer film formed from urethane polymers, acrylate polymers, vinyl polymers, fluoropolymers and blends thereof. Other examples include a cast film comprising an alloy of an acrylic polymer and polyvinylidene fluoride.

With regard to applicants' claims 16, and 17 wherein the adhesive layer comprises a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene, see claims of the reference.

With regard to applicants' claims 18 and 45 the reference discloses that the substrate layer in the multilayer articles of this invention may also comprise at least one of any cured, uncured or at least partially cured thermoset resin and the use of the term "thermoset resin" in the present context refers to any of these options. Suitable thermoset resin substrates include, but are not limited to, those derived from epoxys, cyanate esters, unsaturated polyesters, diallylphthalate, acrylics, alkyds, phenol-

formaldehyde, novolacs, resoles, bismaleimides, PMR resins, melamine-formaldehyde, urea-formaldehyde, benzocyclobutanes, hydroxymethylfurans, and isocyanates. In one embodiment of the invention the thermoset resin substrate comprises a RIM material.

With regard to applicants' claims 19 and 46 note that the reference disclosed that illustrative extending and reinforcing fillers include, but are not limited to, silica, silicates, zeolites, titanium dioxide, stone powder, glass fibers or spheres, carbon fibers, carbon black, graphite, calcium carbonate, talc, mica, lithopone, zinc oxide, zirconium silicate, iron oxides, diatomaceous earth, calcium carbonate, magnesium oxide, chromic oxide, zirconium oxide, aluminum oxide, crushed quartz, calcined clay, talc, kaolin, asbestos, cellulose, wood flour, cork, cotton and synthetic textile fibers, especially reinforcing fillers such as glass fibers, carbon fibers, and metal fibers.

With regard to applicants' claims 20 and 47 wherein the substrate layer comprises a filled, cured thermoset resin selected from the group consisting of reaction injection molding (RIM) compound, long fiber injection polyurethane (LFI-PU) foam, sheet-molding compound (SMC), bulk molding compound (BMC), thick molding compound (TMC), and an acrylic ester-derived thermoset resin comprising a polyphenylene ether, the reference discloses that compositions and weatherable multilayer articles comprising resorcinol arylate chain members are known. The prior art references generally discuss methods to manufacture multilayer articles by various processes including co-injection molding, coextrusion, overmolding, multi-shot injection molding, sheet molding and placement of a film of the coating layer material on the

surface of a substrate layer optionally followed by adhesion of the two layers by a tie-layer, with the coating layer comprising resorcinol arylate polyester chain members.

With regard to applicants' claims 21, 22, 48 and 49 wherein the multilayer article exhibits a ninety-degree peel force of at least 1750 Newtons per meter, Note that the reference discloses that the adhesion of the polyurethane adhesive layer to the polycarbonate-comprising layer provides a ninety-degree peel force of at least 700 and 1750 Newtons per meter respectively.

Specifically with regard to applicants' claims 23 and 50 wherein the thicknesses of layers are: a coating layer of about 2-2,500 microns; a second layer of about 2-2,500 microns; and an adhesive layer of about 8-2,500 microns, the reference discloses that the tie-layer may be from about 0.5 to about 50 mils, and in one embodiment may have a minimum thickness of about 1 mil to ensure good thermoformability and adhesion characteristics. The reference notes that the thickness of the tie-layer depends on the final geometry and shape of the multi-layer article, and may vary depending on the location within the article itself.

With regard to applicants' claim 24 regarding the assembly of claim 1 which is an OVAD device as disclosed by applicants, the reference discloses that the substrate layer is a pre-formed substrate made from a hard, rigid polymer providing a substrate onto which the coating layer is adhered to. In yet another embodiment, the substrate layer is a pre-formed substrate made from glass, ceramics, or a metal such as steel or aluminum, e.g., an automotive panel.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 51 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pub **2003/0175488** page 2 paragraphs 13, 14 and 20 and the examples, page 3 paragraph 24 and 28, Examples 47 –48, paragraph 50 of page 5, in paragraph 79 of page 7.

US Pub **2003/0175488** discloses multilayer articles comprising a coating layer comprising resorcinol arylate chain members bound to a support substrate via an optional intermediate tie layer. Adhesion between the layers of the multilayer article is enhanced by modifying at least a part of a surface of at least one of the layers in the multilayer article by a technique selected from at least one of: surface adhesive treatment, surface corona treatment, flame treatment, plasma surface treatment, vacuum deposition treatment, ionization radiation, chemical surface treatment, surface abrasion treatment, and surface texturing treating.

Applicants' claims 51 and 53 are anticipated by the reference since the assembly now consist of a *cured* substrate.

35 USC 112, Second Paragraph

Claims 51 and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 51 and 53 appear to contradict the language as claimed in applicants' claim 1 upon which is depended upon. Note that the multiple article assembly as noted in (iv) comprises a substrate which is either cured or uncured. As stated, claims 51 and 53 do not claim the same invention as appears to be intended by applicants' specification, i.e. a multiple article assembly comprising an uncured substrate (iv).

Obviousness Nonstatutory Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-53 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 29, 31, 56, 79, 81 of copending **Application No. 10/737944**. Although the conflicting claims are not identical, they are not patentably distinct from each other because **US application 10/ 737944** discloses in claims 29, 31, 56, 79, 81 a method for making a multilayer article comprising (i) a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one aromatic dicarboxylic acid, (ii) a second layer comprising a polymer comprising carbonate structural units, (iii) an adhesive tielayer comprising a copolymer with structural units derived from at least one alkenyl aromatic compound and at least one conjugated diene, and (iv) a substrate layer comprising an uncured thermoset resin, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer; which method comprises the steps of (a) assembling the coating layer, second layer, adhesive layer, and substrate, and (b) subjecting the assembly to conditions under which the thermoset is cured. It is noted that the article of applicants' claims as written, i.e. having an uncured substrate, may also subsequently be cured. Note that the limitations as claimed in applicants' claims 2-53 are anticipated by the dependent claims as set forth above.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Note claims in claims 29,

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31, 56, 79, 81 as described therein.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See also MPEP § 804.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (**571-272-1700**).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

A handwritten signature in black ink, appearing to read "Terressa Boykin". The signature is fluid and cursive, with the first name "Terressa" being more prominent than the last name "Boykin".

Examiner Terressa Boykin
Primary Examiner
Art Unit 1711